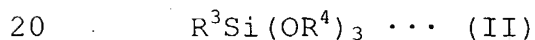
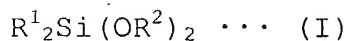


## ABSTRACT OF THE DISCLOSURE

A film is provided which can be applied to high-temperature processes and can fill microspaces between wirings without forming voids and prevent the occurrence of side etching, and also causes less degassing due to increase of an atmospheric temperature. A coating solution containing a reaction product which is obtained by hydrolyzing at least one first alkoxysilane compound selected from the group consisting of compounds represented by general formula (I) and compounds represented by general formula (II) in an organic solvent in the presence of an acid catalyst is applied on a target material to form a coating film, and then the coating film is baked in an atmosphere having an oxygen concentration of 1000 ppm or less to form a silica-based organic film. At least one second alkoxysilane compound selected from the group consisting of compounds represented by general formula (III) may be used in combination:



wherein  $R^1$  and  $R^3$  each represents an alkyl group having 1 to 4 carbon atoms or a phenyl group,  $R^2$ ,  $R^4$ , and  $R^5$  each represents an alkyl group having 1 to 4 carbon atoms.